2014 EPA Region 6 Stormwater Conference Abstract

LOW-IMPACT DEVELOPMENT STRATEGIES FOR PANTHER ISLAND

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This poster will describe a sliding scale of LID implementation options developed in support of the redevelopment of Panther Island in Fort Worth. The implementation options developed represent conceptual approaches to integrate LID elements into the public drainage infrastructure following completion of the Trinity River Project.

The Trinity River Vision Authority commissioned a mass grading and storm drain master plan for the Panther Island development, which includes a proposed urban lake and canal network. Because water quality and aesthetics are crucial to the project's success, the storm drain master plan included conceptual design and modeling of several LID elements, including green streets, rain gardens, and green roofs. We evaluated three levels of increasing LID implementation along with a base level, which assumed traditional development practices. For each implementation level, we adjusted the base hydraulic models to account for the hydrologic benefits of green infrastructure. We also determined the water quality volume treated by each implementation level. Finally, we developed business case evaluations for each implementation level. These evaluations accounted for construction and operation costs, estimated increases in property values, and intangibles such as the subjective value of increased water quality to the surrounding community. This study has served as a valuable tool to communicate the economic and environmental benefits of LID to policy-makers.